PROKHOROV, F.G., kandidat tekhnicheskikh nauk; YANKOVSKIY, K.A., kandidat tekhnicheskikh nauk.

Production potentialities of water purification installations. (MLRA 7:9)
Elek.sta. 25 no.9:11-14 S '54.
(Feed-water purification)

PROKHOROV, F. G.

"The Aging of Ionites and the Problems of Chemical Desalting of Water," an article included in the book "The Thoery and Practice of the Application of Ion-Exchange Agents," edited by K. V. Chmukov and published by the AS USSR, 1955, 164 pp.

PROKHOROV, F.G.

AID P - 1825

Subject : USSR/Engineering

Card 1/2 Pub. 110-a - 2/16

Authors : Prokhorov, F. G., and Subbotina, N. P., Kandidates of Tech. Sci., Moscow

Title : Raising the efficiency of performance of H-Na-cationitic installations

Periodical : Teploenergetika, 3, 11-14, Mr 1955

Abstract : In 1951-52 the authors made a series of laboratory tests of hydrogen zeolite water softeners and developed a method of water softening which they describe. They call this method "hungry" reactivation of H-cationitic filters, and claim that it permits a considerable reduction in the use of sulphuric acid to avoid obtaining acid throw-off waters and acid filtrates, and also to raise the efficiency of the water softening process. Two tables, 6 diagrams

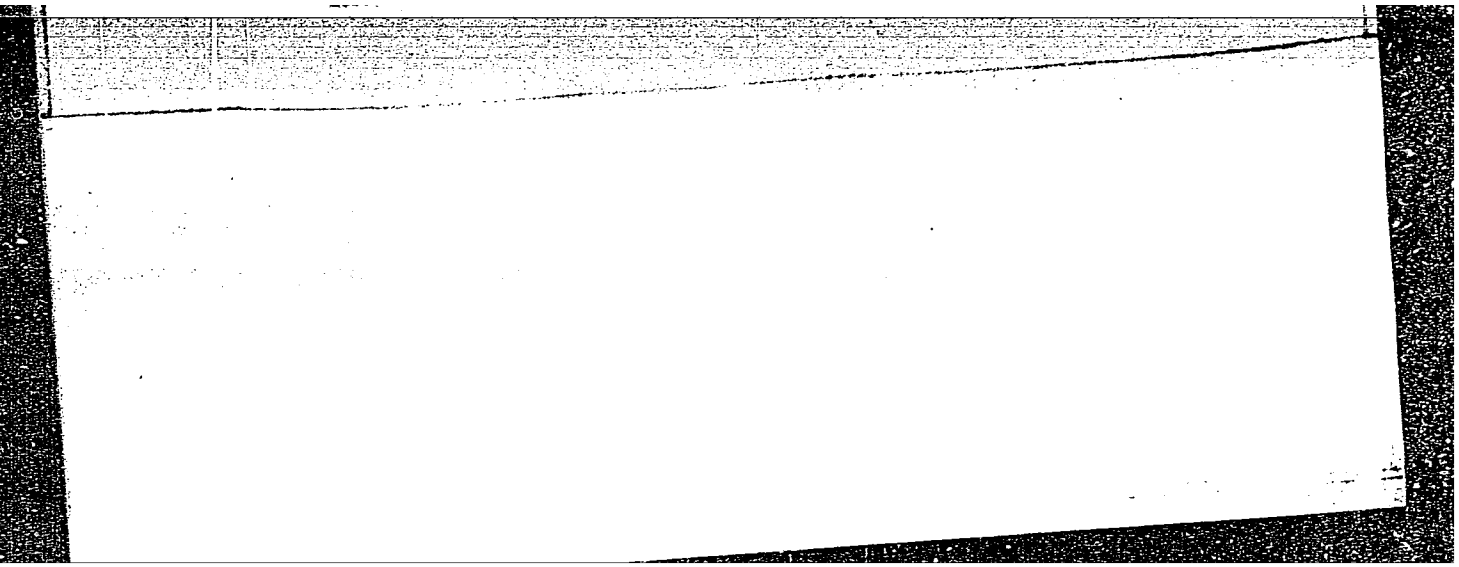
AID P - 1825

Teploenergetika, 3, 11-14, Mr 1955

Card 2/2 Pub. 110-a - 2/16

Institution: All-Union Heat Engineering Institute and Moscow Power Engineering Institute

Submitted : No date



APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001343120014-2"

PROKHOROV, F. G.

USSR /Chemical Technology. Chemical Products and Their Application

I-14

Water treatment. Sewage water.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31751

Author : Prokhorov F. G., Yankovskiy K. A.

Title : Initial Data for the Planning of Units for Chemical Desalination of Natural Water and Condensates

Orig Pub: Teploenergetika, 1956, No 7, 57-62

Abstract: For the desalination of natural water the following schemes are recommended: 1) H-cathionation - OH-anionation (weakly basic anionite) - removal of CO_2 - H-cathionation - OH-anionation (strongly basic anionite): 2) H-cathionation -

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USSR /Chemical Technology. Chemical Products and Their Application

I-14

Water treatment. Sewage water.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31751

- removal of CO_2 - OH-anionation (strongly basic anionite). The 2-nd scheme should be used if the concentration of Cl^- + SO_4^{2-}, in the water being treated, is less than 1.5-2.0 mg-equivalent per liter. For desalination (without desillication) of turbine condensate the following scheme is recommended: H-cathionation - OH-anionation (strongly basic anionite, regenerated with a solution of NH_3). Parameters are listed which characterize the operation of ionites (cathionite -- sulfonated coal, anionites -- AN-2F and EDE-10P) depending on the temperature of the water, rate of filtration, specific expenditures of reagents

Card 2/3

USSR /Chemical Technology. Chemical Products and Their Application

I-14

Water treatment. Sewage water.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31751

for regeneration, specific expenditures of water for servicing the filters, etc.

Card 3/3

AID P - 4372

Subject : USSR/Heat Engineering

Card 1/1 Pub. 110-a - 17/19

Author : Prokhorov, F. G., Kand. Tech. Sci. (Current Events)

Title : Applying chemical processes to remove salts from feed-water.

Periodical : Teploenergetika, 4, 61-62, Ap 1956

Abstract : Chemical treatment of the feedwater at two Moscow power plants is described. Recommendations to use anionites of the EDE-10P and AN-2F types at other plants are made. The need for a new design of salt removing apparatus, mainly for 140 atm drum boilers is stressed.

Institution : None

Submitted : No date

AID P - 4811

Subject : USSR/Engineering

Card 1/2 Pub. 110-a - 14/17

Authors : Prokhorov, F. G., Kand. Tech. Sci., and K. A. Yankovskiy, Kand. Tech. Sci.

Title : Basic data on the design of installations for chemical salt elimination in water and condensates. (Reference Material).

Periodical : Teploenergetika, 7, 57-62, Jl 1956

Abstract : The data presented here are compiled on the basis of laboratory tests conducted by the Water Division of the All-Union Heat Engineering Institute in the field of the chemical treatment of water and condensates, as well as on the basis of tests and one year's experience in the operation of these industrial installations (Heat and Electric Power Plant of the All-Union Heat and Engineering Institute and State Regional Electric Power Plant No. 19 of the Mo..cow Regional Power System Administration). The

AID P - 4811

Teploenergetika, 7, 57-62, J1 1956

Card 2/2 Pub. 110-a - 14/17

equipment, filters, measuring instruments and chemicals used are described, as well as the methods of operation, and illustrated by diagrams.

Institution : All-Union Heat Engineering Institute

Submitted : No date

[redacted], kandidat tekhnicheskikh nauk ; GURVICH, S.M., inzhener, redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Instructions for chemical elimination of salt from water by ion exchange] Rukovodiashchie ukazaniia po khimicheskomu obessolivaniiu vody ionitami. Moskva, Gos.energ.izd-vo, 1957. 191 p. (MLRA 10:9)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Tekhnicheskoye upravleniye.
(Ion exchange) (Water--Purification)

SOV/112-59-4-6572

8(6)

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 4, p 26 (USSR)

AUTHOR: Prokhorov, F. G.

TITLE: Cation-Exchange Dynamics and the Cation Distribution in the Cationite Layer

PERIODICAL: V sb.: Vnutrikotlovyye fiz.-khim. protsessy, vodopodgotovka i vodn. rezhimy kotlov na elektrost. vysokikh i sverkhvysokikh parametrov. M., AS USSR, 1957, pp 494-506

ABSTRACT: In the course of H-cationizing of fresh waters, time diversification of slipping the cations into the filtrate is observed, as well as the capacity of some cations to displace other previously absorbed cations from the cationite (sulfocarbon). The experimental data obtained with H-cationizing of solutions containing the mixtures $CaCl_2 + NaCl$, $BaCl_2 + NH_4Cl$, $NH_4Cl + NaCl$, $CaCl_2 + MgCl_2$ in various concentrations and ratios shows that the least-mobile cations slip into the filtrate ahead of others. Displacing the cations previously

Card 1/2

Cation-Exchange Dynamics and the Cation Distribution in the Cationite Layer

absorbed by the cationite takes place in the reverse order of their absorption. A chromatographic division of cations takes place in the cationite layer; other things being equal, the absorbed cations are arranged in the cationite layer (along the solution movement) according to their decreasing mobility. When the solution is filtered, a partial or full displacement of less mobile cations takes place before the cations with greater mobilities slip into the filtrate.

M.P.S.

PROKHOROV, F.G.

PROKHOROV, F.G., kandidat tekhnicheskikh nauk.

Principal schemes for chemical demineralization of water and their fields of application [with summary in English]. Teploenergetika 4 no.10:3-9 O '57. (MLRA 10:9)

1. Ministerstvo elektrostantsiy SSSR.
(Feed-water purification)

PROKHOROV, F.G.

AKOL'ZIN, P.A.; GURVICH, S.M.; KOTLYAR, R.V.; KOT, A.A.; MAMET, A.P.; MIKHAYLENKO, P.S.; PROKHOROV, F.G.; SOKOLOV, I.M.; CHERNOVA, L.A.; SHKROB, M.S.; YANKOVSKIY, K.A.; GUREVICH, L.S.; POLYAKOV, V.V.

To the editors of "Energetik." Energetik 5 no.3:11-12 Mr '57. (MIRA 10:3)

1. Vsesoyuznyy teplotekhnicheskiy institut im. Dzerzhinskogo (for Akol'zin, Kot, Yankovskiy) 2. TSentral'nyy kotoloturbinnyy institut (for Gurvich, Mamet,) 3. Teplo-elektro-proekt (for Gurevich). 4. Ministerstva elektrostantsiy (for Kotlyar, Prokhorov). 5. Teplovaya elektricheskaya tsentral'naya stantsiya No.9 (for Mikhaylenko, Polyakov) 6. Perevyazochnyy etapnyy punkt (for Sokolov). 7. Moskovskoye rayonnoye upravleniye energokhozyaystva (for Chernova). 8. Energeticheskiy institut Akademii nauk SSSR (for Shkrob).

(Boilers)

PROKHOROV, F.G.

104-3-32/45

AUTHOR: Prokhorova, A.M., Engineer, Prokhorov, F.G. and Yanovskiy, K.A., Candidates of Technical Sciences.

TITLE: Experience of using total chemical de-salting of water on an industrial scale. (Opyt primeneniya polnogo khimicheskogo obessolivaniya vody na promyshlennykh ustanovkakh)

PERIODICAL: "Elektricheskiye Stantsii" (Power Stations), 1957, Vol.28, No.3, pp. 80 - 83 (U.S.S.R.)

ABSTRACT: The chemical method of water de-salting is to be widely used during the sixth Five Year Plan. This note gives brief information about this new method of purifying water as it has been applied at a number of Soviet power stations. One equipment with an output of 50 m^3/hour consists of eight ionite filters. The circuit is given, it consists of first stage H-cation exchange, first stage anion exchange, decarbonating and second stages of cation and anion exchange. The processes are described. Somewhat different circuits are used in other stations. If the process is correctly operated very pure water is produced. The total salt content not exceeding 0.02 mg/l (without SiO_2). It may be used for single-pass boilers without evaporators as well as for drum type boilers. Full scale tests are to be carried out at power stations. There are 6 figures and 1 Slavic reference.

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AVAILABLE: Library of Congress

PROKHOROV, F. G.

96-1-14/31

AUTHORS: Gurevich, L.S., Engineer, Prokhorov, F.G., Candidate of of Technical Sciences.

TITLE: Increasing the Economic Effect of Thermal De-aeration of Feedwater for Steam Boilers (Povysheniye ekonomichnosti termicheskoy deaeratsii pitatel'noy vody parovykh kotlov)

PERIODICAL: Teploenergetika, 1958, Vol.5, No.1, pp. 52-55 (USSR).

ABSTRACT: Commonly-used schemes of thermal de-aeration of feedwater are described and illustrated in Fig. 1a, b and B. These methods incur considerable thermal losses.
Calculated thermal losses with various methods of thermal de-aeration applied to a turbine type BK-100-2 at different temperatures are given in Table 1. At 40 °C, the best thermal efficiency results from single-stage de-aeration at 6 atm. with unde-aerated chemically purified water delivered to the main condensate line before the first low pressure regenerative heater. However, this arrangement is unacceptable because of possible corrosion on the condensate line before the de-aerator.
Table 2 shows approximately the marked economy achievable per cubic metre of chemically purified water when it is delivered to the turbine condensers (Fig.2), as compared with the more

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Increasing the Economic Effect of Thermal De-aeration of Feedwater for Steam Boilers.

frequently used thermal de-aeration circuit shown in Fig. B. The economy is even greater if this method replaces the other methods of de-aeration. The advantages and disadvantages of the method are discussed and its importance stressed, because by the end of 1960 the Ministry of Electric Power Stations (Ministerstvo elektrostantsiy) will have in operation water-treating plant with a total hourly output of 4 000 m^3. Because of the increase in thermal efficiency that is possible, the following steps are recommended: in condensing power stations where make-up water is chemically de-salted, it should be delivered to the turbine condenser: in designing stations of this type, provision should be made to deliver chemically-desalted water to the turbine condenser at a temperature of 10 - 20 °C. At two or three medium-pressure heat and electric power stations using large quantities of H-Na cationised water, it is necessary to verify the de-aerating ability of turbine condensers when the purified make-up is delivered to them at a temperature of 10 - 20 °C. The same applies to two or three high-pressure heat and electric power stations using large quantities of chemically-desalted water. The possibility of

96-1-14/31

Increasing the Economic Effect of Thermal De-aeration of Feedwater for Steam Boilers.

carrying out lime and magnesia de-silication of water at temperatures of 20 - 25 °C should be investigated. If the conditions are favourable, delivery of water from the lime-cationite installations to the turbine condensers should be tried. There are 1 figure and 3 tables.

ASSOCIATION: TEP - VTI

AVAILABLE: Library of Congress.

Card 3/3

SOV/96-58-5-22/27

AUTHOR: Noyev, V.N., Engineer and Prokhorov, F.G., Roddatis, Z.F., Candidates of Technical Sciences

TITLE: New Design Standards for the Quality of Steam, Feed-water and Blow-down Water (Novyye raschetnyye normy kachestva para, pitatel'noy i produvochnoy vody)

PERIODICAL: Teploenergetika, 1958, Nr 5, pp 82 - 85 (USSR)

ABSTRACT: Recent experience with high-pressure boilers makes it necessary to revise existing design standards for the quality of feed-water, boiler-water and steam. The standards also need to be made more precise for boilers operating at lower pressures.
The design standards given in this article relate to boiler equipment and power stations and have been accepted by the technical council of the Ministry of Power Stations after thorough consideration. They also take account of suggestions made by the design organisations, scientific research institutes, ORGRES and power undertakings. The standards will guide design organisations in making up losses of water in condensing and heat-supply power stations with drum-type boilers at pressures of 155 and 110 atm. The risk of fouling the flow parts of turbines with salts in heat and electric

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New Design Standards for the Quality of Steam, Feed-water and Blow-down Water

power stations is not great. Some of the salts are removed with the process or heating steam and stations of this type may be allowed higher steam-contamination figures than condensing stations. Because of recent difficulties with the formation of iron and copper deposits in boilers, only very low concentrations of iron and copper are allowed in feed-water. The standards are also stricter in respect of the free carbon-dioxide content of the steam. In order to restrict brittle fracture, limits are placed on the free alkali content of boiler water. Reference is made to nitrates and nitrites. The previous limits for the oxygen content of feed-water were too high and have been reduced.
The standards given in the tables are to enable design organisations to select the most suitable schemes for preparation of feed-water and condensate and to select boilers' accessories for ensuring the necessary purity of the steam when operated in combination with the selected method of water treatment. The standards should also lead to more reliable water conditions in power-station boilers.
The standards are then given in the form of tables; it is

New Design Standards for the Quality of Steam, Feed-water and Blow-down Water

explicitly stated that they do not apply to atomic power-stations. The quality of steam delivered to a turbine must be in accordance with the requirements of Table 1. Injection water for super-heat control is defined. The quality of feed-water for power stations with drum-type boilers should satisfy the requirements of Table 2. The quality of feed-water for direct-flow boilers of any pressure without separators should conform to Table 3. The salt and silica contents of blow-down water for drum-type boilers, depending on the pressure and the accessories, are stipulated in Table 4. Limitations are placed on the free hydrated alkalinity. The amount of continuous blow-down from drum-type boilers should not exceed the standard figures. Blow-down of more than 1% from heat and electric power stations is permitted only after

SOV/96-58-5-22/27

New Design Standards for the Quality of Steam, Feed-water and Blow-down Water

all measures have been taken to reduce it by improving the boiler accessories.
There are 4 tables

Card 4/4 1. Feed water--Standards 2. Steam--Standards 3. Boilers--Performance

PROKHOROV, F.G.

p 3

SOV/30-59-9-45/51

AUTHOR: Chernova, T. V.

TITLE: Problems Concerning the Water Conditions in Electric Power Plants (Voprosy vodnogo reshima elektrostantsiy) Conferences in the Institute of Power Engineering (oveshchaniya v Energeticheskom institute)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 9, pp. 117-119 (USSR)

ABSTRACT: From May 26 to May 28 a scientific technical meeting was held by the Komissiya dlya vysokikh parametrov pri Energeticheskom institute im. G. M. Krzhizhanovskogo (Committee for High Pressure High Temperature Steam of the Power Engineering Institute imeni G. M. Krzhizhanovskiy). Problems of water conditions and water treatment were dealt with as well as the guarantee of the purity of steam in atomic power plants. Representatives of academic and branch institutes as well as of universities and other interested organizations participated in the conference. It was found that these problems have hitherto not carefully enough been dealt with. The investigation of thermo-physical and physico-chemical processes which take place in atomic power plants is regarded as a

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SOV/30-58-9-45/51

Problems Concerning the Water Conditions in Electric Power Plants. Conferences in the Institute of Power Engineering

main problem of research. It was recommended to promote the further development of radiometrical laboratories and to intensify coordination. It was decided to call a meeting which will have to deal with problems of the method of measuring, control measuring devices and others. From June 24 to June 27 a conference was held by the Committee for High Pressure High Temperature Steam and the Ministerstvo elektrostantsiy SSSR i Moskovskoye otdeleniye Nauchno-tekhnicheskogo obshchestva energeticheskoy promyshlennosti (Ministry of Electric Power Plants USSR and the Moscow Department of the Scientific Technical Association of Power Industry). In this conference the problems of water treatment in thermal power plants for different steam pressure were treated. The following reports were delivered : M. S. Shkrob opened the conference and spoke about the present state and the prospects in the development of water treatment in electric power plants in general. V. M. Vyatkovskiy, V. F. Gvozdev, Ye. M. Krasotkin and others described plants for water treatment. A. A. Krupchitskiy spoke about the planning of combined cationic plants. O. N. Khemyakina dealt with the purification of water

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SOV/32-58-3-45/51

Problems Concerning the Water Conditions in Electric ower Plants. Con-
ferences in the Institute of Power Engineering

by means of filtering by absorbents. F. G. Prokhorov reported on the results obtained in the course of industrial experiments with installations for chemical salt-elimination. A. Y. Pashkov spoke about new "ionites" for plants of water treatment. V. F. Chernov, S. M. Gurvich and others reported on the planning of equipments for the salt-elimination by chemical means.
The members of the conference decided upon concrete measures in the field of production of special equipment, filtering material and reagents. Proposals were made concerning the improvement of purification of water. In universities more experts in this field are to be trained.

Card 3/3

SOV/96-58-10-9/25

AUTHOR: Prokhorov, F.G. (Cand.Tech.Sci.)
Kurskaya, T.A. (Engineer)

TITLE: Optimum conditions of regeneration of H-cationite filters with different cationites (Optimal'nyye usloviya regeneratsii H-kationitovykh fil'trov s raznymi kationitami)

PERIODICAL: Teploenergetika, 1958, No.10. pp. 35-42 (USSR)

ABSTRACT: This article describes laboratory determinations of the relationship between the exchange capacity of sulpho-carbon and cationites KU-1 and KU-2 and the nature, consumption and concentration of the acid used for regeneration. Recommendations are made about methods of regenerating industrial H-cationite filters. The volume of material used in the tests was 100 ml and the experimental conditions were in accordance with standard GOST-5695-53. The absorption capacity of the cationites and the consumption of sulphuric acid are related graphically in Fig.1. It will be seen that the exchange capacity depends on the consumption and concentration of acid, and that the optimum concentration is not the same for all cationites. It is inadvisable to use sulphuric acid stronger than 3 - 4% for regenerating sulpho-carbon, but concentrations of 5 - 7% are better for cationites KU-1 and KU-2. The risk of gypsum formation when treating with acid of this concentration can be prevented by the use of such materials as sodium hexametaphosphate; alternatively, the

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cationites may be regenerated with acid of increasing concentration, starting at 1 and rising to 8%, as was done in the present work. The recommended conditions for the rate of increase of sulphuric-acid concentration when regenerating the different cationites are given in Table.1. By regeneration of this kind, the increase in absorption capacity of the cationites, as compared with that obtained with 1% acid solution, ranges from 15 to 45%. It is, therefore, advisable to evaluate the economic merits of using more acid to gain more capacity: the capital costs are shown in Table.2. and based on the cost data in Table.3. Operating cost data are given in Table.4. An overall cost evaluation is made in Table.5. and shows that for all the cationites considered, it is unjustifiable to increase the consumption of sulphuric acid for regeneration beyond $2\frac{1}{2}$ times the stoichiometric value. It is advantageous to operate the cationites at somewhat lower exchange capacity with reduced acid consumption. Then the increase in capital cost is quickly recovered by economy in acid consumption, as indicated by the graph in Fig.2. Hydrochloric acid can also be used for regeneration. For a given acid concentration and consumption, the exchange capacity is appreciably higher than when sulphuric acid is used. This is illustrated by the curves in Fig.3. and the data of Table.6. As will be seen from Fig.4., the exchange

capacity depends on the concentration of hydrochloric acid; the optimum concentration differs for different cationites, according to the graphs in Fig.5. The optimum concentration for cationite KU-2 is 5 - 7%, but with more strongly acidic cationites such as C50A and JR(400), obtained from abroad, the best concentration is 10 - 12% (See Fig.5.). A technical comparison between regeneration with sulphuric and hydrochloric acids is made in Table.7; capital costs are compared in Table.8. and the overall costs in Table.9. It is shown that the use of hydrochloric acid is unjustified and will remain so unless its cost is more than halved. The preparation of boiler feed-water may accompany the preparation of water for applications where the requirements are not so stringent, as in district-heating systems. The consumption of acid and the discharge of acidic water to the drainage system can then be reduced by using the acid discharge from the boiler-water filters to regenerate the district-heating water filters. Economy of acid can undoubtedly be achieved by studying

Optimum conditions of regeneration of H-cationite filters with different cationites. SOV/96-58-10-9/25

under operating conditions the use of counter-flow H-cationite filters for the first stage of H-cationite treatment. There are 6 figures, and 10 tables.

ASSOCIATION: All-Union Thermo-technical Institute (Vsesoyuznyy Teplotekhnicheskiy Institut)

Card 4/4

PROKHOROV, F. G.

SOV/24-58-10-34/34

AUTHOR: Solomonov, M. S.

TITLE: Conference on Water Preparation in Thermal Power Stations
(O vodopodgotovke na teplovykh elektrostantsiyakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 159-160 (USSR)

ABSTRACT: During June 24-27, 1958, a conference took place on problems
of water preparation in thermal power stations of high, inter-
mediate, super-high and super-critical pressures. The confer-
ence was convened by the Commission on Steam of Very High
Parameters of the Power Research Institute, Academy of Sciences
USSR, imeni G. M. Krzhizhanovskiy, jointly with the Ministry
of Power Stations USSR and the Moscow Scientific-Technical
Society of the power industry. Over 400 representatives of
scientific research establishments and of power stations par-
ticipated. In the section on design, setting and operation of
combined plant with magnesium desilisizing, the following pap-
ers were read:
1) "Experience in setting up and operation of water treat-
ment plant with desilisizing by means of magnesium", V. F.
Gvozdev (ORGRES).
2) "State and tasks in the development of plant for magnesium
desilisizing of water in thermal power stations", V. M. Kvyat-
kovskiy (VTI).
3) "Schemes of automation of plant with desilisizing by means
of magnesium", Ye. N. Krasotkin and V. M. Kvyatkovskiy (VTI).
4) "Problems of designing combined cathion water treatment
plants with magnesium desilisizing", A. A. Krupenitskiy
(Khar'kovskoe otdeleniye TEP).
5) "Desilisizing of the water by means of filters", O. N.
Shemyakin (VODGEO).
6) "Investigation of the process of magnesium desilisizing of
water at elevated temperatures", L. M. Zhivilov (VTI).
7) "Magnesium-cathion method of desilisizing water", L. S.
Fomko (Donbassenergo).
In the second section, "Experience in designing, setting and
operation of chemical desalting plant", the following papers
were read:
1) "Results of investigations and of industrial tests of
chemical desalting plant and prospects of their application
in thermal power stations with super-high and above-critical
steam parameters", F. G. Prokhorov (ENS SSSR).
2) "New ionites for water preparation, plant and prospects of
their industrial manufacture", A. V. Pashkov (Institut
plastmass im. Frunze).
3) "Problems of design of chemical desalting plant", V. S.
Chernov (KhOTEP). I. M. Sokolov.
4) "Automation of pressure filters for water treatment in
power stations", S. M. Gurvich (ZOTEP).
In addition to these papers, 20 informative communications
of various local representatives were presented. It trans-
pired that during recent years methods of magnesium desili-
sizing and of thorough chemical desalting of water have
gained extensive utilisation in Soviet power stations and
these played an important role in the development of Soviet
steam power. Successful mastering of magnesium desilisizing
of water together with the application of stepwise evaporat-
ion in boilers, washing of steam and other measures enabled
ensuring reliable and economic exploitation of high pressure
(110 atm) boilers in combined heat and power stations which
operate with a large loss of condensate. During recent years
rational [illegible] have been developed and also
methods for dry [illegible] as well as mech-
anisation of its handling and an original method was described

Card 3/5

AUTHOR: Prokhorov, F.G. (Cand.Tech.Sci.) SOV/96-58-12-1/18

TITLE: The application of chemical de-mineralisation of water in thermal power engineering (Primeneniye khimicheskogo obessolivaniya vody v teploenergetike)

PERIODICAL: Teploenergetika, 1958, No.12. pp. 3-12 (USSR)

ABSTRACT: Adequate purification of feed water is becoming increasingly important as steam temperatures and pressures rise. Water treatment methods applicable to drum-type boilers at pressures up to 110 atm are briefly reviewed. The method of lime treatment and magnesia de-silication with two-stage sodium cation treatment, though of low capital cost, provides water of rather poor quality. This method persists in many power stations only because nothing better was available at the time they were built. In 1950-54 anion exchange resins able to absorb silicic acid were developed, and with their production on a commercial scale in 1954-55 it became possible to use them for chemical de-mineralisation of feed water. The Ministry of Electric Power Stations now has ten de-mineralisation installations of various kinds operating in connection with drum-type boilers of pressures 110-180 atm. Some of these installations have been operating for two or three years with very satisfactory results, and there is evidence that water so treated is suitable for stations operating at super-critical steam conditions.

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Therefore, this anion method treatment will be extensively used in new power stations. It has been calculated that with certain types of raw water, the analyses of which are given in Table.1., the chemical water treatment is the most economical, even in respect of capital costs. Data are given in Table.2. about capital costs of water-purification equipment employing chemical de-mineralisation, lime treatment with magnesia de-silication and sodium cation treatment, and lime treatment with sodium cation treatment, for the three types of feed water considered. In each case, the output is 200 cu.m. per hour. Data is given in Table.3. about the cost of providing boilers with extraction cyclones and equipment for regulating the super-heat temperature. Table.4. gives complete comparative data for a condensing power-station of 1.2 million kW with drum-type boilers and 3% condensate-loss. This table shows the importance of taking into account other factors in addition to the direct cost of the water-treatment plant. It is shown that de-mineralisation gives the lowest capital cost of the methods considered. The saving is less in industrial heat and electric power stations with boilers operating at 110 atm., and if condensate losses are very heavy, the method may even become uneconomical. It is also proposed to use de-mineralisation for treating the make-up water of direct-flow boilers. With such boilers the condensate

between the height of the filtering layer and the exchange capacity of cationite AN-2F when new, and Curve.2. shows the loss of capacity after a year's use. It will be seen that the loss is much greater when the column is short. The influence on the capacity of anionite AN-2F of the concentration of acid used for regeneration is shown graphically in Figs.3. & 4. The results illustrate the difficulty of judging the loss of capacity from laboratory tests on short columns. In Fig.5. the loss of capacity of anionite AN-2F is plotted against service life in power stations. Its actual working capacities and other design data are plotted in Fig.6. At present the All-Union Thermo-Technical Institute is studying the reasons for loss of exchange capacity of anionite in service. Possible causes are suggested. A number of difficulties have been experienced with anionite EDE-10P, which is used to absorb silicic acid. Graphs of the residual concentration of SiO_3 in the filtrate as a function of the service life appear in Fig.7. Deterioration in the capacity to absorb SiO_3 with service life is illustrated by the curves in Fig.8. The results show that EDE-10P may be used for de-silication for three or four years, or perhaps longer if it is regenerated more frequently. The loss of absorbing capacity is probably associated with contamination by organic substances. Methods of removing them from the water should accordingly be improved. The expected silica

also must be of high quality, but there is always the possibility of cooling water leaking into the condensate. Accordingly, it is proposed to provide de-mineralising installations capable of purifying all the condensate of one turbine, and connecting the installation to each set in turn. This procedure is somewhat complicated and unsatisfactory and it may sometimes be possible to arrange to collect the most contaminated condensate from a number of turbines and to pass it through a small de-mineralisation installation. As shown by the schematic diagram in Fig.1., such an arrangement is simple but will be inadequate if condenser tubes fail. Therefore, regional electric power stations with direct-flow boilers designed up to 1959 will have a de-mineralisation installation capable of handling all the condensate from one of the largest sets. When experience has been accumulated, it may be possible to instal only one de-mineralisation unit per turbine. Operating troubles that have been experienced with chemical de-mineralisation plant are reviewed. Some cationites are not of adequate mechanical strength and sieve analyses of various materials before and after making 150 filtrations, under laboratory conditions, are given in Table 5. It will be seen that cationite KU-2 breaks up severely. Curve 1 in Fig.2. shows the relationship

capacities of various anionites are plotted as a function of service life in Fig.9. Some mechanical troubles have been experienced with filters and there have been cases in which sulphocarbon has carried over into the anionite filters. It is, therefore, important to fit suitable traps between groups of filters. The selling price of anionites is far too high and they are not produced in sufficient quantities. Plans for the production of ion-exchange resins should be modified with a view to satisfying the requirements of the power industry. There are 9 figures, 5 tables and 9 Soviet references.

ASSOCIATION: Ministry of Electric Power Stations USSR (Ministerstvo Elektrostantsiy SSSR)

FOSHKO, L.S., inzh.; LOSEV, A.S., inzh.; PROKHOROV, F.G., kand.tekhn. nauk

Conditioning water for industrial boiler installations and evaporators by the addition of sodium-chloride ions. Teploenergetika 6 no.1:44-48 Ja '59. (MIRA 12:1)

1. Donbassenergo - Vsesoyuznyy teplotekhnicheskiy institut.
(Feed-water purification)

S/096/60/000/009/004/008/XX
E194/E484

AUTHORS: Prokhorov, F.G. and Kurskaya, T.A., Candidates of Technical Sciences

TITLE: The Field of Application of Various Cationites

PERIODICAL: Teploenergetika, 1960, No.9, pp.23-29

TEXT: The process of deep desilication of water was found to be unstable when desalting installations were operated on the so-called simplified circuit consisting in H-cationite treatment in one stage, decarbonization, anion treatment in one stage with a strong base anionite. It was found that the variation in the remanent content of silica was due to the presence of a certain amount of sodium cation in the H-cation treated water. This occurred with anionite grade ЭДЭ-10П (EDE-10P) which is of relatively limited basicity and, now that a number of cationites are being manufactured including sulpho-carbon and grades КУ-1 (KU-1) and КУ-2 (KU-2) it appeared important to establish the conditions of regeneration that would give the most complete absorption of sodium cation so as to establish the best operating conditions for each of the cationites. It was found that the completeness of absorption of the sodium cation depended on: the concentration of sodium chloride in the raw water, the amount of acid used in regenerating the cationite,

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The Field of Application of Various Cationites

the nature of the acid used for regeneration and the nature of the actual cationite. Fig.1 shows curves of the concentration of sodium cation in H-cation treated water for various specific consumptions of sulphuric acid on regeneration of sulpho-carbon and cationite KU-1. It is found that removal of sodium is only really effective with very high consumption of sulphuric acid for regeneration. See the curves of Fig.2 for the remanent concentration of sodium in H-cation treated water as function of the consumption of sulphuric acid and of the content of the sodium chloride in the raw water. When cationites KU-1 and sulpho-carbon were regenerated with hydrochloric acid the remanent sodium content was reduced. However, because of the higher cost of hydrochloric acid it should not be used in this way. Curves of the remanent sodium content for cationite KU-2 with various amounts of acid used for regeneration and of sodium chloride in the raw water are plotted in Fig.3. The ability of various cationites to absorb sodium is shown by the curves of Fig.4. It will be seen that compared with the other two cationites, KU-2 has a relatively large exchange capacity and so it should be used for natural waters

The Field of Application of Various Cationites

containing sodium salts. Fig.5 gives curves of the exchange capacity of various cationites when filtering solutions of sodium chloride, calcium chloride and mixtures of these. It will be seen that calcium and sodium behave very similarly in both cationites, KU-2 and KU-1. Fig.6 shows curves of the concentration of sodium in the filtrate, after H-cation treatment with various cationites of a solution of a mixture of calcium and sodium chlorides. It will be seen that the results are very similar to those of Fig.3. Curves of the exchange capacity of various cationites as functions of the analysis of the raw water are plotted in Fig.8. These curves may be used in the design of industrial demineralizing installations and in comparing different types. When the exchange capacities of the industrial filters for a given height of filtering layer are not the same the choice of cationite should be based on comparison of capital costs related to one gram equivalent of exchange capacity, data for which are given in Table 2. Fig.9 shows curves based on Table 2 and Fig.8 of the capital costs of one gram equivalent of exchange capacity as function of the analysis of the initial water, the grade of

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The Field of Application of Various Cationites

cationite and its cost. It is concluded that if the selling price of cationite KU-2 is near to the estimated figure of 6000 to 7000 roubles per ton it is advisable to use this cationite for all water requiring demineralization. However, as the availability of grade KU-2 is limited it may often be advisable to demineralize water with sulpho-carbon combined with cationite KU-2, the sulpho-carbon being used in the first stage filters and the KU-2 in the second. Cationite KU-2 as now manufactured is of poor mechanical strength and efforts should be made to improve it in this respect. Estimates of the economy that can result from using cationite KU-2 in place of sulpho-carbon for demineralization installations of power stations to be constructed in the current seven year plan may be judged from the data given in Table 3. Usually, the use of cationite KU-1 gives higher capital costs than sulpho-carbon and cationite KU-2 and so it should not be used. There are 9 figures, 4 tables and 1 Soviet reference.

ASSOCIATION: Vsesoyuznyy teplotekhnicheskiy institut
(All-Union Thermo-Technical Institute)

Card 4/4

SOV/96-59-8-13/27

AUTHORS: Gurvich, S.M., Engineer, Prokhorov, F.G., Candidate of Technical Sciences

TITLE: The Preparation of Feed Water for Once-Through Boilers

PERIODICAL: Teploenergetika 1959, Nr 8, pp 48-51 (USSR)

ABSTRACT: The only available methods of preparing feed water pure enough for once-through boilers are to use evaporators or de-mineralisation with ionites. These methods cannot yet be fully compared because most once-through boilers have hitherto run on condensate. Ordinary evaporators have proved inadequate in some cases but the Moscow Division of the Central Boiler Turbine Institute has tested evaporators with two-stage steam-scrubbing which appear to provide distillate of satisfactory quality. De-mineralisation with ionites has been successful and economic, and the difficulties that have been experienced have resulted from inadequate removal of organic contaminants from the water or from poor quality of the available ionites. It is to be expected that by the time the main stations requiring them are ready in 1961 both methods will be reliable.

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The Preparation of Feed Water for Once-Through Boilers

Ionite de-mineralisation of the feed for once-through boilers is expected to be economic for treating natural waters with a total salt content of up to 600 mg/litre. There is at present no experience of operating stations equipped only with once-through boilers, but nevertheless a series of decisions have had to be made about the methods of water treatment to be used in such stations, and the main recommendations are given. These decisions are likely to be modified in the light of experience; in particular, it is possible that waste-heat boilers heated by flue gases may be used if it proves possible to prevent external corrosion of the heating surfaces or excessive wear by ash. The distillate produced from such boilers may be further purified with ion-exchange resins. When once-through boilers are used exclusively, it may be necessary to purify the turbine condensate, at any rate until condensers of improved design have been developed. It may be possible to avoid treating all of the condensate by installing special barriers within the condensers, to divert the 5 or 10% of the condensate most likely to have been

contaminated by cooling water. Ionite de-mineralisation of condensate has been used successfully in the USA and Western Germany, but Soviet tests at the Karaganda and Chelyabinsk stations have been very protracted. The use of ion-exchange resins has been retarded by the slowness of the chemical industry in getting them into production. A further point that will require attention is the need to prevent contamination of the water by corrosion products of steel and non-ferrous metals, such as brass tubes. Once-through boilers are particularly sensitive to such contamination. In conclusion a number of practical recommendations are made about improving the water treatment in stations with once-through boilers. There are 5 Soviet references.

ASSOCIATION: MO TsKTI VTI (The Moscow Division of the Central Boiler Turbine Institute and The All-Union Thermo-Technical Institute)

PROKHOROV, F.G., kand.tekhn.nauk; AKOL'ZIN, P.A., doktor tekhn.nauk; SHKROB, M.S.

Basic problems pertaining to the treatment of feed water for steam power plants during the current seven-year plan. Teploenergetika 7 no.3:3-8 Mr '60. (MIRA 13:5)

1. Ministerstvo stroitel'stva elektrostantsiy, Vsesoyuznyy teplotekhnicheskiy institut i Energeticheskiy institut AN SSSR.
(Feed-water purification) (Steam power plants)

SHKROB, Mikhail Samoylovich, doktor tekhn. nauk; PROKHOROV, Fedor Georgi-yevich, kand. tekhn. nauk. Prinimali uchastiye: AKOL'ZIN, P.A., doktor tekhn. nauk; APEL'TSIN, I.E., doktor tekhn. nauk; ZENKEVICH, Yu.V., kand. tekhn. nauk; KVYATKOVSKIY, V.M., kand. tekhn. nauk; KLYACHKO, V.A., doktor tekhn. nauk; GURVICH, S.M., inzh.; ORZHEROVSKIY, M.A., inzh.; STYRIKOVICH, M.A., retsenzent; MARTYNOVA, O.I., retsenzent; VORONIN, K.P., tekhn. red.

[Water treatment and water systems for steam-turbine electric power plants] Vodopodgotovka i vodnyi rezhim paroturbinnykh elektrostantsii. Moskva, Gos. energ. izd-vo, 1961. 470 p. (MIRA 14:9)
(Feed water purification) (Steam turbines)

PROKHOROV, F.G., kand.tekhn.nauk; GUREVICH, L.S., inzh.

Features of the water treating systems of electric power plants being constructed in the present seven-year plan. (MIRA 14:8)
Teploenergetika 8 no.4:3-6 Ap '61.

1. Ministerstvo stroitel'stva elektrostantsiy, Vsesoyuznyy gosudarstvennyy proyektnyy institut Teploelektroproyekt.
(Electric power plants)
(Feed-water purification)

PROKHOROV, F. G., kand. tekhn. nauk; PROKHOROVA, A. M.

Practice of using anion exchangers in the desalting systems of electric power plants. Teploenergetika 10 no.3:2-8 Mr '63. (MIRA 16:4)

1. Vsesoyuznyy teplotekhnicheskiy institut.

(Feed-water purification)

PROKHOROV, F.G., kand. tekhn. nauk

Present state and prospects for the development of the water treatment systems of thermal electric power plants. Teploenergetika 10 no.12:66-70 D '63. (MIRA 17:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.

AKOL'ZIN, P.A., doktor tekhn. nauk; PROKHOROV, F.G., kand. tekhn. nauk; MAN'KINA, N.N., kand. tekhn. nauk

Problem concerning the water cycle norms of thermal electric power plants. Teploenergetika 11 no.4:77-79 Ap '64. (MIRA 17:6)

1. Vsesoyuznyy teplotekhnicheskiy institut.

AKOL'ZIN, P.A., doktor tekhn. nauk; PROKHOROV, F.G., kand. tekhn. nauk

Polymers and their prospective use in thermal power engineering. Teploenergetika 11 no.5:31-35 My'64. (MIRA 17:5)

1. Vsesoyuznyy teplotekhnicheskiy institut.

PROKHOROV, F.G., kand. tekhn. nauk

Means for decreasing the expenditure of reagents in the operation of desalting systems. Teploenergetika 11 no.10:2-7 O '64. (MIRA 18:3)

1. Vsesoyuznyy teplotekhnicheskiy institut.

PROKHOROV, F.G., kand. tekhn. nauk

In technical council of the State Production Committee on Power Engineering and Electrification of the U.S.S.R. Teploenergetika 12 no.7:94-96 JL '65. (MIRA 18:7)

PROKHOROV, F.G., kand.tekhn.nauk; GUREVICH, L.S., inzh.

Comparison of water conditions and means for water treatment in block-type state regional electric power plants with different boiler systems. Teploenergetika 12 no.10:2-8 O '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut i Vsesoyuznyy gosudarstvennyy proyektnyy institut "Teploelektroproyekt".

PROKHOROV, F.L.

Necrosis of a fibromyomatous node of the uterus with perforation into the abdominal cavity following labor. Akush. i gin. no.3:75 My-Je '53. (MLRA 6:7)

(Uterus--Tumors)

PROKHOROV, Fedor Nikitovich; BELOKRYLIN, Yu.F., inzh., retsenzent; LEVIN, B.M., inzh., retsenzent; RYAZANTSEVA, Yu.A., retsenzent; KALININ, V.K., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Electric traction departments and electric power supply of electric railroads] Elektrotiagovoe khoziaistvo i energosnabzhenie elektricheskikh zheleznykh dorog. 2., perer. i dop. izd. Moskva, Transzheldorizdat, 1962. 134 p. (MIRA 16:1)

(Electric railroads--Current supply)
(Electric locomotives)

PROKHOROV, Fedor Nikitovich; GAL'PERIN, L.L., inzhener, redaktor; BOBROVA Ye., N., tekhnicheskiy redaktor.

[Electric traction and power supply of electric railroads] Elektrotiagovoe khoziaistvo i energosnabzhenie elektricheskikh zheleznykh dorog. Moskva, Gos.transp.zhe-dor.izd-vo, 1957. 155 p. (MIRA 10:11)

(Electric railroads)

PROKHOROV, G.

Reserves of a leading factory. (by Engineer G. Prokhorov, Learned Secretary of the Urals Scientific, Engineering & Technical Society of Iron & Steel Workers)

Soviet Source: Pravda, Oct. 11, p. 2

Current Digest of the Soviet Press (in [redacted] Library), Vol, 2, No. 41, 1950, P. 38

BAVRIN, Ye.; PROKHOROV, G.

Achievements in the economic development of the Mongolian People's Republic. Vop.ekon.no.7:69-78 Jl '56. (MLRA 9:9)
(Mongolia--Economic conditions)

PROKHOROV, G.

Cooperation of the world socialist system with underdeveloped countries. Vop. ekon. no.11:77-86 N '62. (MIRA 15:11)
(Underdeveloped areas) (Economic assistance, Communist)

PROKHOROV, G.

The Soviet Union's cooperation with Afro-Asian countries [with English summary in supplement]. Vnesh. torg. 29 no.4:2-5 '59.
(MIRA 12:6)
(Russia--Foreign economic relations)

FEL'DMAN, L.S.; PROKHOROV, G.A.; BRONNIKOVA, T.A.

Photoelectric analyzer for the analysis of aluminum alloys. Zav. lab. 24 no. 6:776-778 '58. (MIRA 11:7)
(Spectrophotometer)
(Aluminum alloys--Analysis)

PROKHOROV, G. A.

AUTHOR: Gol'din, M.L., Prokhorov, G.A., Fel'dman,L.S. 32-9-31/43

TITLE: A Device for the Determination of the Strength of Small Particles According to Residual Induction (Pribor dlya opredeleniya tverdosti melkikh detaley po ostatochnoy induktsii)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp.1129-1131 (USSR)

ABSTRACT: With reference to the description of the device TAM-1 in Zavodskaya Laboratoriya, 1957, 3, 357 the description of a new construction of the device TAM-2 is here given. This is intended for the strength test of small parts by means of residual induction. Instead of a mechanized switch a photoelectric switch, which responds in the case of parts with a cross section of 2 mm and more, is used. The sensitivity of the device is increased by the introduction of additional amplification cascades in the amplifier unit. Holding up the part in the magnetizing coil is brought about by a special construction of the magnetic stabilizer. There follows a description of the device. It has already been introduced into production and controls 30 different small parts made of steels: 20KhN3A, 2Khl2, 30KhGSA. As residual induction in parts with a sufficiently high demagnetization factor is proportional to coercive force, the applicability of the control of a thermal treat-

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32-9-31/43

A Device for the Determination of the Strength of Small Particles According to Residual Induction

ment of the type of steel concerned within a certain domain of strength can be judged on the device TAM-2 also on the basis of the relationship between coercive force and strength. As shown by investigations, a control of the quality of thermal treatment after residual induction of parts is impossible in the case of steels 45, 40KhN, 40KhNMA and 38KhA, because there is no unique relationship between strength and residual induction within the domains of strength of these parts which are of practical interest. There are 2 figures and 1 table.

AVAILABLE: Library of Congress

Card 2/2

PROKHOROV G.A.

GOL'DIN, M.L.; PROKHOROV, G.A.; FEL'DMAN, L.S.

Apparatus for determining hardness of small parts by means of residual induction. Zav.lab. 23 no.9:1129-1131 '57. (MIRA 10:12)
(Metals--Magnetic properties) (Hardness--Testing)
(Magnetic instruments)

B:KHRIKH, S.G.; PROKHOROV, G.A.

System of controlling the flow of granular and lumpy materials with the use of a radioisotope tracer. Nauch. trudy Permskogo (MIRA 18:3) no.5:67-72 '63.

NEL'SON, I.A.; PROKHOROV, G.A.; KAGANOVA, E.Ya.

Method and device for controlling the thickness of the protective layer of concrete. Nauch. trudy PermNIUI no.5:73-80 '63. (MIRA 18:3)

32-24-6-38/44

AUTHORS: Fel'dman, L. S., Prokhorov, G. A., Bronnikova, T. A.

TITLE: A Photoelectric Analyzer for the Analysis of Aluminum Alloys (Fotoelektricheskiy analizator dlya analiza alyuminiyevykh splavov)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 6, pp 776 - 778 (USSR)

ABSTRACT: There exist a number of Soviet constructions of photoelectric spectral apparatus with different optical schemes and ways of registration, the optical scheme proposed by the NIITavtoprom being the most simple one; it can also be produced in works laboratories. The experiments carried out by the authors of this article who used the electric scheme proposed by the NIITavtoprom (a valve voltmeter with constant voltage and greater initial resistance), did not achieve any positive results because of the strong influence of electric disturbances. The scheme of arrangement was altered by Yu. A. Novikov and the schematic representation is mentioned; from the description it follows that the average relative measuring error

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A Photoelectric Analyzer for the Analysis of Aluminum Alloys

amounts to 0,5 % and that the apparatus has limited possibilities; (the visible part of the spectrum, the small dispersion, and the existence of four measuring canals). The arrangement was used for quick analyses of aluminum alloys, with iron and magnesium having been determined in concentration intervals of from 0,1 - 0,8 % Mg and 0,2 - 1,15 % Fe. The calibration diagrams for both determinations are given as amounting to ± 2,9 and 3,8 % in the case of iron, and ±2,5 and ±3,8 % in the case of magnesium; determination for two elements takes 15 seconds. There are 3 figures and 1 reference, which is Soviet.

1. Aluminum alloys--Analysis 2. Spectrum analyzers---Design
3. Spectrum analyzers--Performance

Card 2/2

PROKHOROV, G.A.

GOL'DIN, M.L.; PROKHOROV, G.A.; FEL'DMAN, L.S.

Automatic device for checking the hardness of parts by means of residual induction. Zav. lab. 23 no.3:357-361 '57. (MLRA 10:6)
(Metals--Hardening) (Automatic control) (Magnetic testing)

KAKHAROV, Abdulakhad Kakharovich; PROKHOROV, Grigoriy Mikhaylovich; UL'YANOVSKIY, R.A., otv.red.; GARMSEN, O.M., red.izd-va; NEGRIMOVSKAYA, R.A., tekhn.red.

[Friendly aid and mutually beneficial collaboration; economic relations of the U.S.S.R. with industrially underdeveloped countries of the East] Druzheskaia pomoshch' i vzaimovygodnoe sotrudnichestvo; ekonomicheskie sviazi SSSR s promyshlenno slabo razvitymi stranami Vostoka. Moskva, Izd-vo vostochnoi lit-ry, 1959. 80 p. (MIRA 13:2)

(Economic assistance)

ISKANDAROV, Rishad Giniyatullich; PROKHOROV, G.M., nauchnyy red.; KOMAROVA, T.F., red.; NAZAROVA, A.S., tekhn.red.

[Aid from the Soviet Union to the underdeveloped countries] Sovetskii Soiuz - slaborazvitym stranam. Moskva, Izd-vo "Znanie," 1961. 38 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.3, Ekonomika, no.8).

(MIRA 14:4)

(Underdeveloped areas) (Economic assistance)

L 4926-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AT5008622 S/2933/64/007/000/0024/0030

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Mekova, Ye. A.; Kondrat'yeva, Ye. S.; Prokhorov, G. M. 27 26 D+1

TITLE: The use of petroleum-derived mercaptans as regulators in emulsion polymerization of divinyl and styrene

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh, v. 7, 1964, 24-30

TOPIC TAGS: emulsion polymerization, styrene, rubber, vulcanizate, kerosene, petroleum

ABSTRACT: Experiments were performed on mercaptans from petroleum as regulators in emulsion polymerization of divinyl and styrene. The kerosene fraction of petroleum was selected because of the high content of mercaptan sulfur. Kerosene

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L 43926-65

ACCESSION NR: AT5008622

practically 100%, but recovery was no better than 60%, probably because of the strong tendency to oxidize in an alkaline environment. Twelve samples of mercaptans were obtained, and many of the characteristics are tabulated. Tests with these mercaptans and comparison with tert-dodecyl mercaptan show that the plastic and physico-mechanical properties of the resulting rubber are practically

tables.

ASSOCIATION: Institut organicheskoy khimii BashFAN SSSR (Institute of Organic Chemistry, Bashkirian Branch, AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 006 OTHER: 006

Card 2/2

PROKHOROV, G. M.

"Assistance by USSR in programs for national development of less developed countries"

report to be submitted for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

PROKHOROV, G.N., gornyy inzh.; SEDLOV, M.G., gornyy inzh.; SHCHETININ, N.I., gornyy inzh.

Study of the operation and practice of exploiting hinged folding scrapers. Gor. zhur. no.7:44-46 Jl '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy gorno-metallurgicheskiy institut tsvetnykh metallov (for Prokhorov).
2. Zyryanovskiy svintsovyy kombinat (Sedlov, Shchetinin).

PROKHOROV, G.N.

Evaluation of the use of highly productive systems of mining in mines of the Zyryanovsk lead combine. Sbor. trud. VNIITSVETMET no.4:47-65 '59. (MIRA 16:8)

(Zyryanovsk region--Mining engineering)

MAYYER, R.M., inzh.; PROKHOROV, G.N., inzh.; PUSTOVALOV, A.I., inzh.; PROKHOROV, N.S., tekhnik-mekhanik

Wedge connection of a removable blade with a scraper. Gor. zhur. no.11:73 N '64. (MIRA 18:2)

PROKHOROV, G.N., gornyy inzh.

Advantage of using adjustable scrapers. Gor. Zhur. no.4:40-42 Ap '60. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov, Ust'-Kamenogorsk.
(Excavating machinery)

MITIN, Nikolay Aleksandrovich; PROKHOROV, G.P., kand. tekhn.nauk; VASIL'YEVA, V.I., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Tables for laying out horizontal and vertical circular curves and curvatures with connecting curves on highways] Tablitsy dlia razbivki gorizontal'nykh i vertikal'nykh krugovykh i zakruglenii s perekhodnymi krivymi na avtomobil'nykh dorogakh. Moskva, Gosgeoltekhizdat, 1963. 490 p. (MIRA 17:2)

MITIN, N.A., PROKHOROV, G.P.

A new method of computing and marking out curvatures with transition curves on automobile highways. Sbor. st. po geog. no.11:53-62 '60. (MIRA 13:8)

(Roads--Surveying)

KOZOREZOV, Yu.I.; KAMAKIN, N.M.; KOSTYLEVA, [illegible] PROKHOROV, G.V.

Obtaining oxygen-containing compounds from technical C_3-C_5 hydrocarbon mixtures. Neftekhimiia 4 no.2:290-293 Mr-Ap'64 (MIRA 17:8)

1. Institut khimii polimerov i monomerov AN UkrSSR, Kiyev.

KOZOREZOV, Yu.I.; KAMAKIN, N.M.; KOSTYLEVA, Z.A.; PROKHOROV, G.V.

Oxidation of n-butane-isobutane mixtures. Zhur. prikl. khim. 38 no.5:1183-1185 My '65. (MIRA 18:11)

1. Institut khimii polimerov i monomerov AN UkrSSR.

VINOGRADOVA, Ye.N.; PROKHOROVA, G.V.

Polarographic determination of ultraminute quantities with the use of a stationary mercury electrode. Zav.lab. 26 no.1:41-45 '60. (MIRA 13:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Polarography) (Electrodes, Mercury)

PROKHOROV, I.

Roofing

My experience with mechanization in roofing work. Zhil.-kom.khoz. 2, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952, Uncl.

PROKhOROV, I. A. Cand Agri Sci -- (diss) "The Effect of Time Periods and Methods of Sowing of Perennial Grasses on the Yield of Greens and Hay in the Southern Regions of Rostov Oblast," Moscow, 1958, 20 pp, 110 copies (All-Union Sci Res Institute of Fodder im V. R. Vil'yams) (KL, 49/60, 128)

M-6

COUNTRY : USSR
CATEGORY :

ABS. JOUR. : RZBiol., No. 19, 1958, No. 87091

AUTHOR : Prokhorov, I. A.
INST. :
TITLE : Growing of Perennial Grasses in the Semi-Arid Zone of Rostovskaya Oblast'.

ORIG. PUB. : Vestn. s.-kh. nauki, 1957, No 10, 127-131

ABSTRACT : In experiments of North-Caucasus Affiliate of the All-Union Feed Institute and Neklinovskiy variety-trial grounds, the percentage of surviving alfalfa plants was directly dependent on amount of precipitation during the autumn-winter season and varied from 66.4 to 72.0% of their number during the period of mass germination, with 216.4-199.6 mm of precipitation; it was of only 26.3% when precipitation over this period amounted to 82.2 mm. Field germination of seeds of leguminous and cereal grasses sowed singly and without support was considerably higher than on sowing in admixtures with barley or millet as a nurse crop. On decrease of sowing rate of nurse crop the

CARD: 1/2

M-6

Country : USSR
CATEGORY :

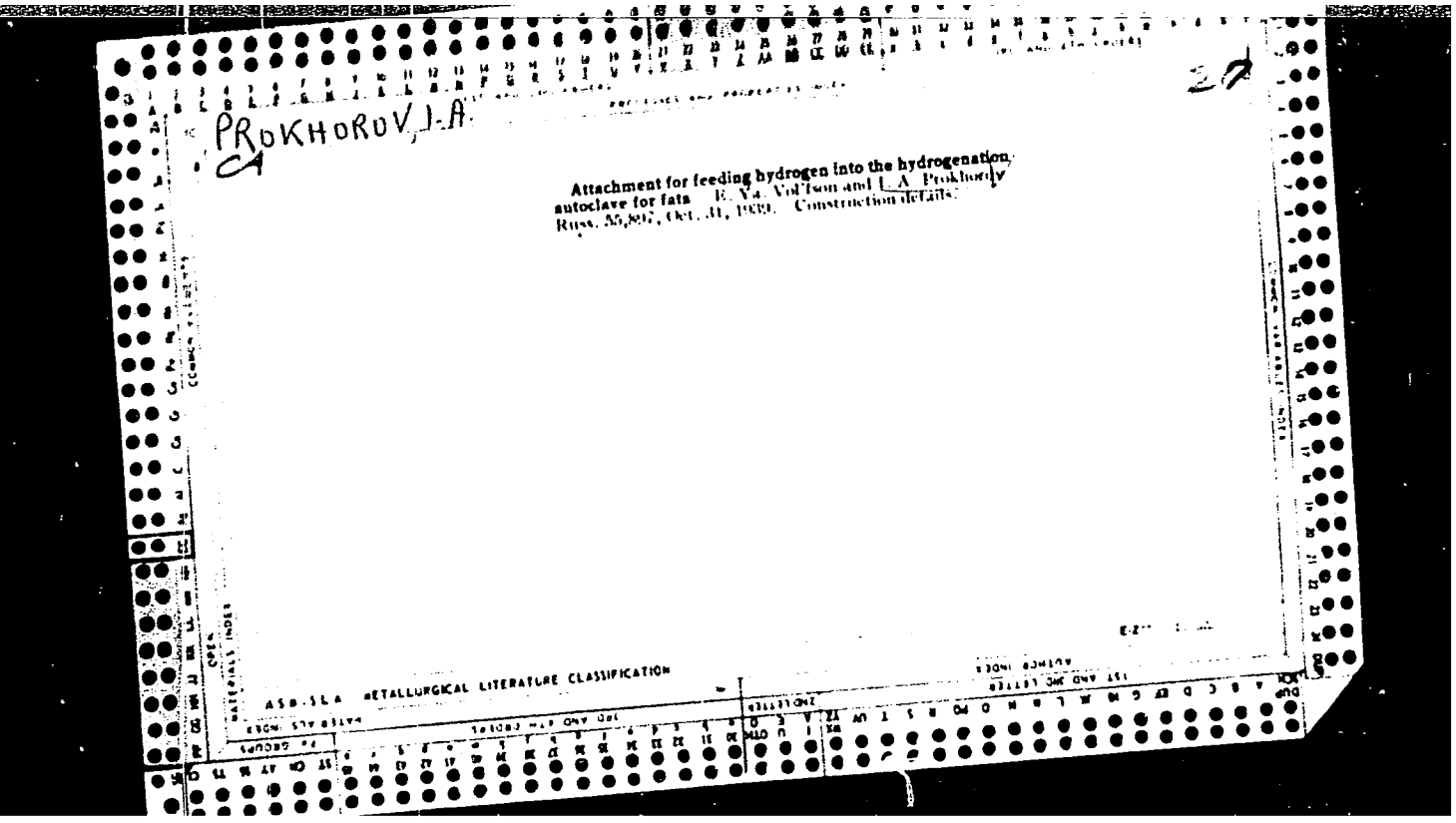
ABS. JOUR. : RZBiol., No. 19, 1958, No. 87091

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : field germination of alfalfa increased 1-1/2 to 2 times, that of cereal grasses somewhat less. On sowing during summer and autumn the field germination varied mostly depending upon the amount of moisture in the soil at the depth of sowing of the seed. To reduce losses of water from the soil after harvesting of nurse crop it is advantageous to work the field with a rotary hoe with subsequent rolling. Grass mixtures of two leguminous and two cereals afforded higher yields than singles.

A. A. Shchibrya.



PROKHOROV, I.A.

CA

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PROCESSES AND PROPERTIES INDEX

Mechanical transportation of spent catalyst (at the Salolin hydrogenation plant). A. Dymshits and I. Prokhorov. *Masloboino Zhirovoe Delo* 16, No. 4, 11-12 (1940).—Spent catalyst is transported to or from the filter presses and autoclaves by charging it into funnel hoppers and propelling through tubes with a worm screw. Diagrams are appended. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROKHOROV, I.A., kand. sel'skokhoz. nauk

Ways for the improvement of pastures. Zemledelie 27 no.9:57-60 S '65. (MIRA 18:10)

PROKHOROV, I.A., kand.sel'khoz.nauk

Testing corn varieties and hybrids for forage. Trudy "Ask.-Nov." 8:235-243 '60. (MIRA 14:4)

(Corn (Maize)—Varieties)

ZAV'YALOVA, Yu.P., PROKHOROV, I.I.

Evaporation of snow in northern Kazakhstan. Trudy KazNIGMI no.15:124-136 '60. (MIRA 14:1)
(Kazakhstan—Snow) (Evaporation)

UTIMAGANBETOV, M.M., kand.geogr.nauk; BERLYAND, T.G., kand.geogr.nauk; BEZVERKHNIY, Sh.A., kand.fiz.-matem.nauk; BAYDAL, M.Kh., kand. geogr.nauk; KUZNETSOV, A.T., kand.geogr.nauk; CHUBUKOV, L.A., doktor geogr.nauk; SHVYREVA, Yu.G., mladshiy nauchnyy storudnik; UTESHEV, A.S., kand.geogr.nauk; GOL'TSBERG, I.A., doktor geogr. nauk; KLYKOVA, Z.D., starshiy nauchnyy sotrudnik; MEN'SHIKOVA, Ye.A., mladshiy nauchnyy sotrudnik; GEL'MGOL'TS, N.F., starshiy nauchnyy sotrudnik; PROKHOROV, I.I., starshiy nauchnyy sotrudnik; TKACHENKO, N.S., mladshiy nauchnyy sotrudnik; ZHDANOVA, L.P., red.; BRAYNINA, M.I., tekhn.red.

[Climate of Kazakhstan] Klimat Kazakhstana. Pod red. A.S.Uteshova. Leningrad, Gidrometeor.izd-vo, 1959. 366 p. (MIRA 13:5)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Kazakhskiy pedagogicheskiy institut (KazPI) (for Utimagambetov). 3. Glavnaya geofizicheskaya observatoriya im. A.I.Voyeykova (GGO) (for Berlyand, Gol'tsberg). 4. Kazakhskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut KazNIGMI) (for Bezverkhniy, Baydal, Kuznetsov, Uteshev, Klykova, Men'shikova, Gol'mgol'ts, Prokhorov, Tkachenko). 5. Institut geografii Akademii nauk SSSR (IG AN SSSR) for Shvyreva).
(Kazakhstan--Climate)

PROKHOROV, I.I.

Representativeness of station snow surveys. Trudy KazNIGMI no.11: 96-100 '59. (MIRA 13:6)
(Kazakhstan--Snow)

PROKHORKOV, I.I.

PHASE I BOOK EXPLOITATION SOV/3879

Grigorenko, Petr Grigor'yevich, Candidate of Military Sciences, Docent, Major General; Dmitriy Matveyevich Milyutenkov, Candidate of Military Sciences, Senior Scientific Worker, Colonel; Ivan Ignat'yevich Prokhorkov, Candidate of Military Sciences, Colonel; Andrey Alekseyevich Sidorenko, Candidate of Military Sciences, Lieutenant Colonel; Aleksandr Filippovich Shramchenko, Candidate of Military Sciences, Senior Scientific Worker, Colonel.

Metodika voyenno-nauchnogo issledovaniya (Methods of Military Science Research) Moscow, Voyenizdat, 1959. 266 p. No. of copies printed not given.

Ed. (Title page): P. A. Kurochkin, General of the Army; Ed.: (Inside book): B. N. Morozov, Colonel; Tech. Ed.: A. N. Mednikova.

PURPOSE: This is a textbook in military science research for high-ranking officers.

COVERAGE: This book, based on Marxist dialectical principles, was written by a team of authors at the Military Academy im. Frunze and is an attempt to systematize military science research principles and techniques. The book

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discusses the use of logic and statistics in military science research, organization of a military science research project, selection and planning of research projects, proper use of reference materials and military experience, proper style and preparation of manuscripts pertaining to military science research projects, etc. No personalities are mentioned. There are 86 references, all Soviet.

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SOV/123-59-14-55714

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Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 14, p 171 (USSR)

AUTHOR: Prokhorov, I.I.

TITLE: Actinometric Devices With Membrane Pick-Ups

PERIODICAL: Tr. Kazakhsk. n.-i. gidromet. in-ta, 1956, Nr 7, pp 82 - 86

ABSTRACT: A membrane pyranometer, designed by the author, is described, in which a black-painted aluminum membrane (foil), 0.05 - 0.02 mm thick, tightened on an aluminum frame of 90 mm in diameter, is used as pick-up of radiant energy. When being exposed to the radiation of the sun the membrane is heated and deflects, and from the magnitude of this deflection the magnitude of intensity of the sun's radiation can be determined. The thermal inertia of the pyranometer described can be brought up to 10 seconds and the sensitiveness to 60 graduations for one calory, i.e. it is possible to obtain characteristics which come close to the characteristics of thermo-electrical pyranometers. Two circuits, three references.

M.V.S.

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